REMARKS

The pending claims are claims 1, 4, 6, 8 and 10-15. Claims 2 and 3 were canceled in the Amendment filed April 20, 2001. Claims 7 and 9 were canceled in the Amendment filed November 6, 2001. Claim 5 has also been canceled herein.

Preliminarily, Applicants respectfully request the Examiner to return a copy of initialed form PTO-1449 submitted together with the Information Disclosure Statement filed May 5, 1999. Additionally, Applicants respectfully request the Examiner to initial the bottom two entries in Form PTO-1449 submitted together with the Information Disclosure Statement filed May 23, 2000. Copies of the foregoing were submitted together with the Amendment filed November 6, 2001.

In response to the rejection under 35 U.S.C. § 112, second paragraph, claim 1 has been amended to recite "a blend" as suggested by the Examiner.

Applicants comment on the remaining points as follows.

The term "compression degree" is defined with particularity at page 37, lines 22-24 of the specification. The "degree of flatness" means that the aspect ratio of a long axis to a short axis of a section of an oxygen absorbing agent particle is 0.6 or less. The aspect ratio of the spindle-shaped particle is defined at page 38, lines 2-8 of the specification. The spindle-shaped particle, as the Examiner stated, has a length a and a maximum diameter b. The term "iron-type" in original claim 5 describes an oxygen-absorbing agent composed of a reducing iron powder and an oxidation promoter or catalyst. Claim 5 has been canceled. The term "flat" in claim 1 describes the shape of an oxygen-absorbing agent particle as shown in Fig. 1 such that the size of the short axis b is shorter than the long axis a. The aspect ratio is 0.6 or less. It is respectfully

submitted that the claims as amended fully comply with 35 U.S.C. § 112, and withdrawal of the foregoing rejection is respectfully requested.

Claims 1-6, 8 and 10-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,908,676 to Otaki et al. Applicants respectfully traverse for the following reasons.

In the present invention, oxygen absorbing agent particles having an aspect ratio of short axis size/long axis size of 0.6 or below are present in an amount of at least 50% and are flat or spindle-shaped particles having a compression degree of at least 20%. These characteristics are important with respect to oxygen absorbability and outer appearance of the container. When oxygen absorbing agent particles having an aspect ratio of 0.6 or below are used in an amount of less than 50%, or oxygen absorbing agent particles having a compression degree of less than 20% are used, inferior oxygen absorbing performance is observed and the outer appearance of the container is also degraded. When the aspect ratio is decreased or the compression degree is increased, namely when the flatness degree is increased, the oxygen absorbing speed increases by increasing the surface area of the particles. Thus, orientation is brought about in the layer direction, namely, in the melt-fluidizing direction of the resin composition of oxygen absorbing agent particles. It is considered that this orientation prevents bulging and cracking in the thickness direction (specification at page 12, line 30 to page 13, line 29). Such functional effect is clear from the Examples of the specification.

Example 7 of the present specification shows that when oxygen absorbing agent particles satisfying the above conditions are used, the oxygen concentration within the container after one

month can be maintained at 0.16% and can be maintained after three months at 0.42%. In addition, the outer appearance of the container after absorption of oxygen was good. When oxygen absorbing agent particles having an aspect ratio in excess of 0.6 were used in an amount of at least 60% (Comparative Example 7-1), the oxygen concentration within the container after one month was 0.34%, the oxygen concentration after three months became 0.76%, and the outer appearance of the container was deteriorated.

On the other hand, in Otaki et al, the de-oxidizing agent is described simply as "granular". There is no description or suggestion concerning the aspect ratio or compression degree. There is also no description of the effect of defining the aspect ratio or compression degree as claimed in claim 1.

As noted by the Examiner, Otaki et al describes that the oxygen absorbing agent particle has an average particle size of 50 μm or below. Based thereon, the Examiner contended that the aspect ratio and surface area could be readily determined through routine optimization.

Applicants strongly disagree.

Namely, in Comparative Example 7-1 described at page 46, lines 26-35 of the specification, the reducing iron powder described therein had a particle diameter of 40 μm but an aspect ratio in which more than 60% of the particles exhibited an apparent aspect ratio of not smaller than 0.6. Thus, there is no relationship between particle diameter and aspect ratio which would allow one ordinary skill to determine the critical parameters as required by claim 1 through routine optimization.

Additionally, the present claims require a compression degree of at least 20%, and Otaki et al is entirely silent with respect to this aspect of the invention.

Additionally, Applicants respectfully dispute that Otaki et al describes a multilayer distributed structure equivalent to a single layer distributed structure. That is, col. 8, lines 51-62 of Otaki et al cited by the Examiner relates to layer (I), that is, the thermoplastic resin layer having oxygen permeability. This is not a description of a layer containing an oxygen absorbing agent.

The expression "multi-layer distributed structure" in this invention means the formation of a multilayer dispersed structure in the layer containing the oxygen-absorbing agent. Otaki et al is entirely silent with this requirement of the invention.

As to claim 10, the Examiner considered that the method of producing the oxygen-absorbing agent particle (dry-milling) has little patentable weight. However, when Example 7 of the present specification is compared with Comparative Example 7-1, the difference between dry-milling and spraying an aqueous solution of NaCl on the iron powder becomes apparent. As clear from Table 5 at page 48 of the specification, the oxygen concentration within a container and outside appearance of Comparative Example 7-1 were inferior to that of Example 7 in which dry-milling was employed.

This is explained as follows.

In a wet-type oxygen-absorbing agent particle, the surface thereof is oxidized, by spraying with water, and the oxygen-absorbing agent particle is swelled. Accordingly, the aspect ratio becomes large and the thermoplastic resin layer forms cracks. On the other hand, because

dry-milling mechanically collapses the oxygen-absorbing agent particle, the particle can be made flat, and, as a result, the aspect ratio can be decreased.

Finally, regarding the method of measuring particle diameter, Applicants note that the meaning of "average particle diameter" differs according to the method of measuring. Thus, it is important to define the measuring method.

For the above reasons, it is respectfully submitted that the amended claims are patentable over Otaki et al, and withdrawal of the foregoing rejection under 35 U.S.C. § 103(a) is respectfully requested.

Withdrawal of all rejections and allowance of claims 1,4, 6, 8 and 10-15 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

Respectfully submitted,

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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 5 is canceled.

The claims are amended as follows:

1. (Three Times Amended) A thermoplastic resin composition containing an oxygen absorbing agent, wherein a resin matrix of the thermoplastic resin composition is substantially non-compatible and is composed of [blends] a blend of a plurality of thermoplastic resins and/or elastomers, one of the non-compatible thermoplastic resins and/or elastomer being a propylene polymer, and the other being an ethylene polymer, and the thermoplastic resins and/or elastomers form a multilayer distributed structure in the resin matrix, the oxygen absorbing agent comprises oxygen absorbing agent particles composed of a reducing iron powder and a layer of an oxidation promoter or a catalyst which sticks to the surface of the reducing iron powder, and the oxygen absorbing agent particle has an average particle diameter of 10 to 50 μm as measured by a laser scattering method and an aspect ratio (short axis size/long axis size) of 0.6 or below being present in an amount of at least 50% and is a flat or spindle-shaped particle having a compression degree of at least 20%.